

## Three New Records of Mosquitos Occuring in Korea (Diptera, Culicidae)

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### INTRODUCTION

For the first time, the reference collection of mosquitoes in Korea was carried through out the country, under the project of WHO-JEVUR, in 1969. After that, in 1970 and 1971, biological survey for *Culex tritaeniorhynchus* and taxonomic survey of the *Culex tritaeniorhynchus* group of mosquito were performed in very limited areas, Shintaein, Cholla Puk-do and Sasang, Pusan city.

During these period, 35 species of 8 genera out of 45 species of 9 genera recorded by former workers were confirmed. In addition to these, 3 unreported species representing 2 genera, namely *Aedes kobayashii*, *Aedes gallosi* and *Mansonia ochracea*, were found.

In the present paper, authors intend to give short descriptions accompanied by illustrations of the more important parts of the adults and the larvae.

### DESCRIPTION

#### 1. *Aedes (Finlaya) kobayashii* Nakata, 1956

##### Adult (Female)

Head: Proboscis all dark. Palpus also dark, about one sixth the length of proboscies. Vertex with pale golden curved scales and upright forked scales of the same color. The latter scales scattered

sparsely over the dorsal surface of vertex. Lateral surface of nape covered with pale golden broad scales.

Thorax: Scutum with narrow curved scales of two colors, golden and dark brown. As a rule, scutum covered with the golden scales all over, carrying several markings formed by dark brown curved scales. Those markings are so characteristic,

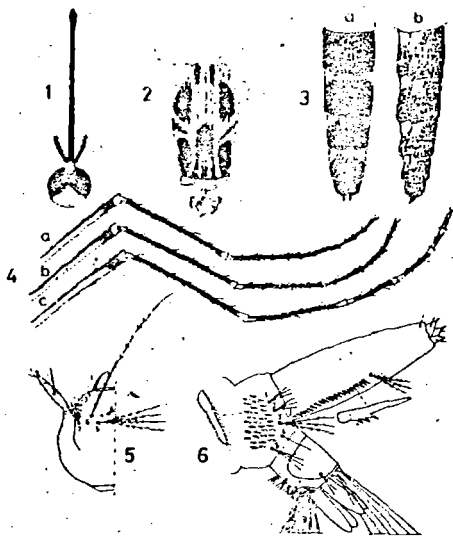


Fig. 1. *Aedes (Finlaya) kobayashii*, adult female and larva.

1. dorsal aspect of head; 2. dorsal aspect of thorax; 3. abdomen (a, dorsal aspect; b, lateral aspect); 4. legs (a, fore leg; b, midleg; c, hind leg); 5. head of larva; 6. anal segment of larva.

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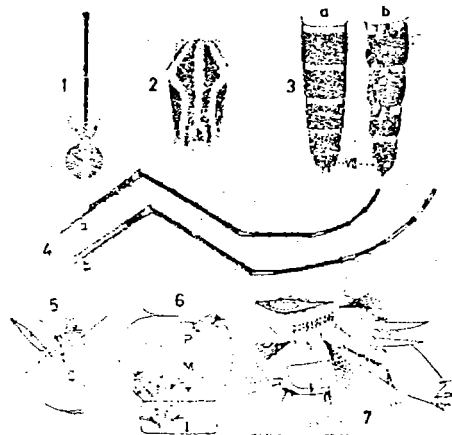


Fig. 2. *Aedes (Stegomyia) galloisi* adult female and larva.

1. dorsal aspect of head; 2. dorsal aspect of thorax; 3. abdomen (a, dorsal aspect; b, lateral aspect); 4. legs (a, fore and mid legs; b, hind leg); 5. head of larva; 6. thorax and first abdominal segment of larva; 7. anal segment of larva.

resembling footprint in shape, that they exhibits a remarkable feature of this species (see Fig. 1 & 2). Scutellum with a small patch of pale narrow curved scales in the middle part of each lobe and brown narrow curved scales on posterior margin.

**Wings:** Slightly dark, with flat scales on costa, vein 1, apical part of veins 2.1 and 2.2, vein 3, remigium of vein 5 and vein 5.2, and paler narrow scales on the other veins.

**Legs:** Anterior surface of each femur dark, with very small white areas on both basal and apical ends. Posterior surface of each femur covered with white scales, except a small area of apical portion. Each tibia dark for almost whole surface, with narrow white basal and apical bands. Fore tarsal segment I with narrow basal band, the rest of tarsi dark entirely. Mid tarsal segment I and II with narrow basal bands, but very rare on segment II, the rest of tarsi dark entirely. Hind tarsal segment I-V with narrow basal and apical white

bands.

**Abdomen:** Tergites dark, with a pair of baso-lateral triangular patch of white scales on I-VII, but only some of those on V, VI and VII visible in the dorsal view.

#### Larva (Fourth instar)

**Head:** Hair 1-C (Head hair No.1) fairly long, filiform, light in color; 2-C lacking; 3-C small, simple; 4-C small, 2-3 branched; 5-C long, 3-6 branched; 6-C single, extremely long, about 1.3 times the length of head, slightly bent inwards; 7-C with 9 branches, relatively short, not reaching the antenna hair 1. Antenna slender, dark, sparsely spiculate; antennal hair 1-A simple, long almost reaching the tip of antenna.

**Abdomen:** Comb scales arranged in a triangular patch, around 31 in number, each scale tapered forward apex, lateral fringe extending from near base to apex. Siphonal hair, 1-S moderately long, inserted just beyond middle, with 3-4 branches which do not reach the apex of siphon, pecten confined to the basal half of siphon, composed of around 22 teeth, each of which has 1-3 denticles.

**Habitat:** Tree hole in deep forest.

**Collection:** Larvae-August 1969, September 1970.

**Specimens seen:** Adult female-10, male-10, and larval and pupal skins-10.

**Distribution:** Japan, Korea (Kwangnang, Kyungchi-do; Mt. Song-Ni, Chungchong Puk-do).

#### 2. *Aedes (Stegomyia) galloisi* Yamada, 1921

##### Adult (Female)

**Head:** Proboscis all dark. Palpus dark, with white scales at tip, about one fifth of proboscis. Vertex with two narrow white stripes of flat scales submedially, the two stripes branched laterally near eye margin; the other parts covered with dark, flat scales.

**Thorax:** Scutum covered with dark, curved scales, with a white stripe medially, which is forked at the posterior end before proscutellar bare space; two lateral curved white lines, which remind one of a pair of question marks, facing each other, extending from anterior to posterior margins. Each scutellar lobe covered with flat, white scales.

**Wing:** No special characters.

**Legs:** Dorsal surface of each femur dark except for a narrow apical white band; ventral surface white except for a small dark area at apex. Each tibia all dark. Tarsal segments 1 and 2 of fore and mid legs with basal white bands, others entirely dark; tarsal segments 1 and 2 of hind legs dark, with basal white bands, the other segments white, with a small dark patch on apical end.

**Abdomen:** Tergites dark, with a pair of baso-lateral triangular patch of white scales on II-VI, and narrow, white, basal bands on II-VI.

#### Larva (Fourth instar)

**Head:** Hair 1-C (Head hair No. 1) fairly long, filiform, light in color; 2-C lacking; 3-C small, simple; 4-C moderately long tufty, 9-12 branched; 5-C long, simple; 6-C bifid, fairly long; 7-C bifid, as long as 6-C. Antenna slender, smooth; antennal hair 1-A simple, short, inserted at the middle of antennal shaft.

**Thorax:** Hair 11-P (Prothoracic hair No. 11) bifid; 2-T (Metathoracic hair No. 3) simple. These characters distinguish this species from *Aedes flavopictus* in which these hairs have multiple branches.

**Abdomen:** Hair 4-1 (1st abdominal segment hair No. 4) simple (more than 3 branches in *Aedes flavopictus*). Comb teeth of 8th segment around 10 in a single row, thorn-shaped, pointed at tip, and fringed at base; 1-VIII (8th abdominal segment hair No. 1) 8-10 branched, 2-VIII single, 3-VIII 6-8 branched, 4-VIII single, 5-VIII 8-11 branched; siphonal hair 1-S 3-forked, inserted

a little beyond the last pecten tooth and just a little dorsal to it; pecten of around 11 teeth which are evenly spaced and reaching about basal 1/3 of siphon. Anal segment completely ringed by the saddle; saddle hair forked in three mostly.

**Habitat:** Tree hole in deep forest.

**Collection:** Larvae-August 1969, Sep. 1970.

**Specimens seen:** Adult female-10, male-10, larval and pupal skins-10.

**Distribution:** U.S.S.R., Japan, Korea (Kwang-nung, Kyungki-do; Yongmun, Yechon, Kyungsang Puk-do).

### 3. *Mansonia (Coquillettidia) ochracea* Theobald, 1903

This is one of yellow mosquitos of moderate size, resembling some species of *Aedes* in the

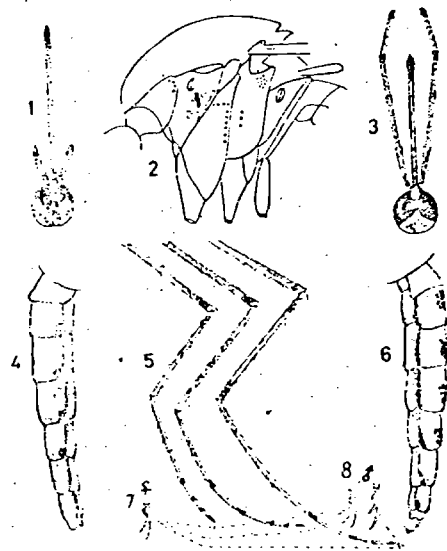


Fig. 3. *Mansonia (Coquillettidia) ochracea*, adult female and male.

1. dorsal aspect of head (female); 2. lateral aspect of thorax; 3. dorsal aspect of head (male); 4. lateral aspect of abdomen (female); 5. legs (a, fore leg; b, mid leg; c, hind leg); 6. lateral aspect of abdomen (male); 7. tarsal claw (female); 8. tarsal claw (male).

form of male palpi, which are slightly longer than the proboscis, the last two segments subequal in length, turned downward, bearing hair tufts. Postspiracular bristles absent in this subgenus, but present in the genus *Aedes*. Distinct from *Culex* in the absence of pulvilli. Tarsal claws of female all simple, those of fore and mid legs of male unequal, wing scales narrow and lanceolate. Pleura with only a few small patches of scales.

#### Adult (Female)

**Head:** Proboscis and palpi ochraceous, speckled with brown scales, apices dark brown. Vertex ochraceous brown, with narrow-curved golden scales, and upright forked scales which are dark at tip.

**Thorax:** Ochraceous brown, covered with narrow-curved golden scales and long brown bristles. Scutellum pale brown, covered with narrow-curved golden scales, two pairs of long, and a pair of short, golden brown bristles on the posterior margin, of mid lobe and a pair of short ones on each lateral lobe. Integument of scutum and pleuron uniformly pale; dark brown markings just below the spiracle, extending to sub- and post-spiracular areas, the extension is not clear sometimes.

**Abdomen:** Covered with ochraceous yellow scales, the second to the fifth tergites with small apico-lateral patches of dark brown scales.

**Wings:** Veins uniformly covered with yellow lanceolate scales.

**Legs:** Ochraceous yellow, speckled with brown scales. Apices of all femora black except the very tips. Basal portion of fore tibia speckled with dark scales, second to fifth segments of fore tarsi with apical dark bands. Mid tibia speckled with dark scales on central portion, tarsi with apical dark bands. Hind tibia speckled with dark scales on apical and basal portions; tarsi with an apical dark band on each segment. Tarsal claws of female

all simple.

#### Adult (Male)

**Head:** Proboscis ochraceous, speckled with brown scales, the apex deep brown. Palpus longer than proboscis, ochraceous, speckled with brown scales, the last two segments subequal in length, dark brown at the tip. third segment pale brown apically. Vertex ochraceous brown, with narrow-curved golden scales and upright forked scales.

**Abdomen:** Covered with ochraceous yellow scales on central portion of tergites from second to fifth; lateral patches elongated, widened near the margin of second to fourth tergites; apical patches on fifth to seventh.

**Legs:** Fore and mid tarsal claws unequal, those of hind tarsus equal.

**Wings:** Vein covered with yellow lanceolate scales.

**Habitat:** Adults were collected from grass field near swamp marsh area, and a light trap in a house.

**Collection:** Adult-June 1971.

**Specimens seen:** Female-10, male-30.

**Distribution:** Malaya, India, Thailand, Indochina, China, Japan, Ryukyu, Philippines, New Guinea, Indonesia, Korea (Sasang, Pusan city).

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### Three New Records of Mosquitos

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